

RT 200 SERIES

REACTION TORQUE SENSOR

FEATURES

- Rated nominal 0.1 N·m to 10 N·m
- High accuracy up to 0.05 %
- Overload capacity up to 200 %
- Compact and robust
- High torsional stiffness
- Protection class: IP42
- Special designs available upon request



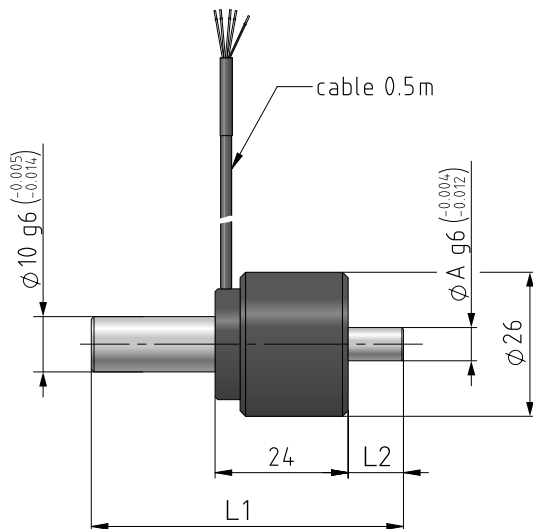
Fig.1 : RT 202 Reaction Torque Sensors

DESCRIPTION

With its compact and maintenance-free design, the RT 200 Reaction Torque Sensor from Magtrol brings many significant advantages to torque measurement applications. Based on strain-gauge technology, the RT 200 Reaction Torque Sensor provides highly accurate torque measurement. The RT 200 Reaction Torque Sensor has been designed to perform high

precision static torque measurement with small dynamic rotation (and limited angle) in both the clockwise and counterclockwise directions. The sensor measures small-reaction torque values using shaft connections in-line with the component under test. Main field applications include actuator and valve testing, and fastener testing on medical devices.

DIMENSIONS



PN	TORQUE	ØA	L1	L2
RT 201	0.1 N·m	6 mm	60.5 mm	10 mm
RT 202	0.2 N·m	6 mm	65.5 mm	15 mm
RT 203	0.5 N·m	6 mm	65.5 mm	15 mm
RT 204	1 N·m	8 mm	65.5 mm	15 mm
RT 205	2 N·m	8 mm	65.5 mm	15 mm
RT 206	5 N·m	8 mm	65.5 mm	15 mm
RT 207	10 N·m	10 mm	68.5 mm	18 mm

Color code

Supply + : Red
Supply - : Black
Shield

Signal + : White
Signal - : Green

SPECIFICATIONS

MODEL	RT 201	RT 202	RT 203	RT 204	RT 205	RT 206	RT 207
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TORQUE MEASUREMENT

Static rated torque (RT)	0.1 N·m	0.2 N·m	0.5 N·m	1 N·m	2 N·m	5 N·m	10 N·m
Combined error (linearity + hysteresis)	0.2 % (0.05 %) ¹	0.1 % (0.05 %) ¹	0.05 %				
Overload capacity (% of RT)				200 %			
Max. static torque (% of RT)				300 %			

MECHANICAL CHARACTERISTICS

Bending moment max.	0.1 N·m	0.2 N·m	0.5 N·m	1 N·m	1 N·m	2.5 N·m	5 N·m
Material	Stainless steel						
Stiffness	18 Nm/rad	48 Nm/rad	162 Nm/rad	373 Nm/rad	373 Nm/rad	883 Nm/rad	1480 Nm/rad

ENVIRONMENT

Nominal temperature range	+20 °C to +60 °C						
Service temperature range	+10 °C to +80 °C						
Reference temperature	+23 °C						
Temperature influence on zero	0.01 % / °C						
Temperature influence on sensitivity	0.01 % / °C						
Protection class	IP42						

INPUT AND OUTPUT SIGNALS

Input resistance	1000 Ω						
Insulation resistance	10 GΩ						
Power supply	0.5 VDC to 12 VDC (max 15 VDC)						
Torque output signal ^{2,3}	0.5 mV/VDC ± 20%				1 mV/VDC ± 20%		

- 1) Typical accuracy is 0.05 %. The larger value is included due to variations in calibration devices
- 2) Each transducer is delivered with an acceptance test report, on which the exact individual accuracy is provided

- 3) Suitable strain gauge amplifier options: LMU 209, LMU 212, AN1500 M, GM80

For dynamic measurements, Magtrol recommends the use of the LMU 209 Load Monitoring Unit



Fig.2 : LMU 209 Load Measuring Unit

ORDERING INFORMATION

ORDERING NUMBER	P/N 125 -	___	- 000 - 01X
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201, 202, 203,... : Model number

Example: RT 201 Reaction Torque Sensor would be ordered as P/N 125-201-000-01X.